Filing at a Glance

Company:	Athene Annuity and Life Company
Product Name:	AMPLIFY ACTUARIAL MEMO - SNFL MAY 2020
State:	District of Columbia
TOI:	A03I Individual Annuities - Deferred Variable
Sub-TOI:	A03I.003 Single Premium
Filing Type:	Form
Date Submitted:	02/11/2020
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Author(s):	Susan Falk, Andrea Davey, Melissa Dunn, Jana Hirth, Jeff Heagel
Reviewer(s):	
Disposition Date:	
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General Information

Project Name: AMPLIFY ACTUARIAL MEMO - SNFL MAY 2020
Project Number: AMPLIFY ACTUARIAL MEMO - SNFL MAY 2020
Requested Filing Mode: Informational
Explanation for Combination/Other:
Submission Type: New Submission
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Deemer Date:
Submitted By: Susan Falk

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Created By: Susan Falk
Corresponding Filing Tracking Number:

Filing Description:
RE: Athene Annuity and Life Company
NAIC # 61689
INFORMATIONAL FILING

We are submitting a revised Actuarial Memorandum for RIA I (05/19), which was submitted to your department on 11/27/2018 under SERFF Tracking Number AMER-131682797.

We are submitting a revised Actuarial Memorandum because we are updating the methodology of how the interest rate used in calculating minimum nonforfeiture amounts by adjusting the timing of the values pulled for the 5-Year Constant Maturity Treasury Rate.

The Actuarial Memorandums are attached under the Supporting Documentation tab, are the only documents that have been changed from the previously approved filing.

If you have any questions regarding this submission, please feel free to contact me at sfalk@athene.com.

Thank you!
Susan Falk

Company and Contact

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CoCode: 61689
Group Code: 4734
Group Name:
FEIN Number: 42-0175020

State of Domicile: Iowa
Company Type: Insurance
State ID Number:

State: District of Columbia **Filing Company:** Athene Annuity and Life Company
TOI/Sub-TOI: A03I Individual Annuities - Deferred Variable/A03I.003 Single Premium
Product Name: AMPLIFY ACTUARIAL MEMO - SNFL MAY 2020
Project Name/Number: AMPLIFY ACTUARIAL MEMO - SNFL MAY 2020/AMPLIFY ACTUARIAL MEMO - SNFL MAY 2020

Filing Fees

Fee Required? No

Retaliatory? No

Fee Explanation:

SERFF Tracking #:	*AMER-132253938*	***State Tracking #:***		***Company Tracking #:***	*AMPLIFY ACTUARIAL MEMO - SNFL MAY 2020*

State:	*District of Columbia*	***Filing Company:***	*Athene Annuity and Life Company*
TOI/Sub-TOI:	*A03I Individual Annuities - Deferred Variable/A03I.003 Single Premium*		
Product Name:	*AMPLIFY ACTUARIAL MEMO - SNFL MAY 2020*		
Project Name/Number:	*AMPLIFY ACTUARIAL MEMO - SNFL MAY 2020/AMPLIFY ACTUARIAL MEMO - SNFL MAY 2020*		

Supporting Document Schedules

Satisfied - Item:	Actuarial Memoradums
Comments:	
Attachment(s):	Amplify Act Memo.pdf
Item Status:	
Status Date:	

ATHENE ANNUITY AND LIFE COMPANY

Actuarial Memorandum
Single Purchase Payment Index-Linked Deferred Annuity
Form Numbers: RIA I (05/19), CW I (05/19), TIW I (05/19), CS I(05/19)

ENDORSEMENTS
Bailout I (05/19), GMDB I (05/19), Interim I (05/19)

I. Description of Contract

General Description

This contract is a Single Purchase Payment Index-Linked Deferred Annuity. Athene Annuity and Life Company will hold reserves in a separate account, established by under Iowa Law. The portion of the assets of the separate account equal to the reserves and other contract liabilities with respect to the separate account will not be chargeable with liabilities arising out of any other business conducted. The Separate Account is not registered under the Investment Company Act of 1940.

This contract will only offer Index-Linked and Fixed Segment Options, as described in this memorandum. It will never offer any segregated fund/subaccount-type investment options, and it will never have subaccount/mortality & expense charges typically associated with such options.

Purchase Payment

The minimum Purchase Payment is $10,000 and the maximum Purchase Payment is $1,000,000. Amounts exceeding the maximum Purchase Payment may be accepted at the sole discretion of the Company.

Annuity Date

The Annuity Date will be the later of the Contract Anniversary following the Annuitant's age 95 or the 10th Contract Anniversary. If Joint Annuitants are named in the application, the Annuity Date will be set based on the age of the older Joint Annuitant.

Death Benefit

During the Withdrawal Charge Period, the Death Benefit will be equal to the greater of the Interim Value or the Purchase Payment less net proceeds from prior Withdrawals (the Return of Premium Benefit). After the Withdrawal Charge Period, the Death Benefit will be equal to the Interim Value. The Death Benefit will be calculated as of the date of death. If the Owner is changed or an additional Owner is added during the Withdrawal Charge Period, the Death Benefit will equal the Interim Value.

Contract Value

The Contract Value at any time is equal to the sum of the Segment Values.

Withdrawals

If a Withdrawal is made from the Contract in excess of the Free Amount during the first six Contract Years, we will assess a Withdrawal Charge. The Withdrawal Charge offsets promotion, distribution expenses, and investment risks born by the Company.

The amount of the Withdrawal Charge depends on the length of time the Contract has been owned, and the amount withdrawn. The Withdrawal Charge Schedule below is shown as a percentage of the amount withdrawn. The Contract provides a Free Withdrawal privilege that allows a withdrawal of 10% of the

Contract Value as of the previous Contract Anniversary (the Free Withdrawal amount) annually without incurring a Withdrawal Charge. An Interest Adjustment and Equity Adjustment will still apply. Any unused portion of the Free Withdrawal amount for a Contract Year cannot be carried over to the following Contract Year.

If the amount of a partial withdrawal in any Contract Year exceeds the Free Withdrawal amount for that Contract Year, the excess Withdrawal will be subject to any applicable Withdrawal Charge. If the Owner surrenders the Contract, a Withdrawal Charge will be applied to any Free Withdrawal previously taken during the same Contract Year.

Segment Allocation

The Purchase Payment will be credited to the Holding Account on the Contract Date. The Holding Account will be transferred to the Segment Options on the Segment Start Date based on the Segment Allocation Percentages selected by the Owner. The Segment Allocation Percentages selected for each Segment Option must be a whole percentage ranging from 0% to 100%. The sum of the Segment Allocation Percentages must equal 100%.

Segment Fee

The Segment Fee is an annualized rate that is assessed daily as a percentage of the Segment Fee Base on Index-Linked Segment Options. The Segment Fee amount for that Segment Option is then deducted daily from that Segment Option's Segment Value during the Accumulation Phase when the Segment Value for that Segment Option is positive. The Segment Fee will never cause the Segment Value to be less than zero.

The Segment Fee amount deducted on any day is equal to the annualized Segment Fee rate divided by the number of calendar days in the current year of the Segment Term Period and multiplied by the Segment Fee Base on that day. For example, in a 2-Year Segment Option with a Segment Start date of February 8, 2019, the annualized rate will be divided by 365 during the first year of the Segment Term Period (from February 8, 2019 to February 8, 2020) and will be divided by 366 during the second year of the Segment Term Period (From February 8, 2020 to February 8, 2021) due to the leap year.

Segment Fee Base

The initial Segment Fee Base for each Segment Option is the Segment Value on the Segment Start Date. The Segment Fee Base on any other day in the Segment Term Period is the Segment Value on the Segment Start Date less any Withdrawals deducted from the Segment Option through the prior Business Day. We use the Segment Fee Base to determine the Segment Fee amount we will deduct from that Segment Option's Segment Value.

Segment Value

The Segment Value for any Segment Option on the initial Segment Start Date is the amount of the Holding Account allocated to the Segment Option.

On any other date, the Segment Value for any Segment Option is equal to A – B + C + D – E – F, where:

- A is the Segment Value as of the previous day;
- B is the Segment Fee amount deducted from the Segment Option on this date;
- C is the amount of Segment Credits applied to the Segment Option on this date;
- D is any amount transferred from the Contract's other Segment Options to this Segment Option on this date;
- E is any amount transferred from this Segment Option to the Contract's other Segment Options on this date; and
- F is any Withdrawals deducted from this Segment Option on this date.

The following Segment Options will be available at launch. Athene Annuity and Life Company reserves the right to add or limit Segment Options.

Buffer Segment Options			
Segment Options	**Segment Term**	**Index / Ticker**	**Protection Level**
1	1-year	S&P 500® (SPX)	10%
2		Russell 2000® (RTY)	10%
3		MSCI EAFE (MXEA)	10%
4	2-year	S&P 500® (SPX)	10%
5		Russell 2000® (RTY)	10%
6		MSCI EAFE (MXEA)	10%
7	6-year	S&P 500® (SPX)	20%
8	6-year	Performance Blend* S&P 500® (SPX) Russell 2000® (RTY) MSCI EAFE (MXEA)	10%
Floor Segment Options			
Segment Options	**Segment Term**	**Index / Ticker**	**Protection Level**
9	1-year	S&P 500® (SPX)	10%
10		Russell 2000® (RTY)	10%
11		MSCI EAFE (MXEA)	10%
12	2-year	S&P 500® (SPX)	10%
13		Russell 2000® (RTY)	10%
14		MSCI EAFE (MXEA)	10%
Fixed Segment Option			
Segment Options	**Segment Term**	**Index / Ticker**	**Protection Level**
15	1-Year	N/A	N/A

* The Performance Blend (Buffer Multi-Index) uses a weighted average index return where 50% of the Aggregate Index Change reflects the return of the best performing index on the Segment End Date, 30% reflects the second best performing index, and 20% reflects the lowest performing index. The Buffer, Cap, and Participation Rate are then applied to the Aggregate Index Change.

Transfers

At the end of each new Segment Term Period prior to the Annuity Date, the Owner may elect to transfer some or all of the value of one Segment Option to another Segment Option. After the six-year Withdrawal Charge Period, only one-year Segment Term Periods will be available. If the Contract Owner does not elect to withdraw or allocate funds from an expiring Segment Option with a six-year Segment Term Period, we will allocate the Segment Value to the Fixed Segment Option. Segment Options with two-year Segment Term Periods that expire on or after the last day of the Withdrawal Charge Period will automatically transfer the Segment Value to their one-year counterparts (same index, same protection type – Floor or Buffer), unless the Contract Owner elects to withdraw the funds or allocate them in a different proportion.

Segment Interim Value

The Interim Value calculation consists of two parts: an Interest Adjustment and an Equity Adjustment, which are calculated separately for each Segment Option to which the contract owner may allocate Contract Value. The Interest Adjustment applies to any Withdrawal taken during the first six Contract Years from a Index-Linked or Fixed Segment Option, including Withdrawals taken on a Segment End Date. The Equity Adjustment applies to any Withdrawal taken from a Index-Linked Segment Option on a day other than a Segment End Date. The Segment Interim Value is equal to the Segment Value adjusted for any applicable Interest Adjustment and Equity Adjustment.

On any Business Day, the Segment Interim Value for any Segment Option is equal to A + B + C, where:

A is the Segment Value on of this date;
B is any applicable Interest Adjustment on this date; and
C is any applicable Equity Adjustment on this date.

The Equity Adjustment is equal to zero on any Segment End Date.

Cash Surrender Value

The Cash Surrender Value is the Interim Value adjusted for any applicable Withdrawal Charges.

Interest Adjustment

The Company invests in fixed income assets to support the value of the Segment Options. Upon any Withdrawal, including annuitization, death, partial withdrawal, or surrender, the Company must sell a portion of the assets. The Interest Adjustment approximates the change in value of the fixed income assets that are sold to fund any distribution from the Contract. It is applied consistently across all Segment Options available in the Contract and does not relate specifically to any particular fixed income assets supporting the Contract. The Interest Adjustment applies only during the first six Contract Years (when a Withdrawal Charge may apply). The Interest Adjustment is equal to zero after the expiration of the Withdrawal Charge Rate Schedule.

On any day, the total Interest Adjustment for any Segment Option equals (A x B) where:

A Is the Segment Value on this date, immediately prior to any Withdrawal; and
B Is the Interest Adjustment Factor.

The Interest Adjustment Factor for any Segment Option equals $(R^{N/12} - 1)$, where:

N = Is the number of complete months remaining before the Withdrawal Charge Rate Schedule expires; and

R = Is equal to (1 + A) / (1 + B), where:

A Is the Beginning Interest Adjustment Index Value; and
B Is the Closing Interest Adjustment Index Value.

The Beginning Interest Adjustment Index Value is equal to the closing price of the Interest Adjustment Index on the Contract Date. The Closing Interest Adjustment Index Value is equal to the closing price of the Interest Adjustment Index on the day we calculate the Segment Interim Value. The Interest Adjustment Index is the 7 Year Point on the A Rated US Bloomberg Fair Value Curve.

If the closing price of the Interest Adjustment Index on the day the Interest Adjustment is calculated is greater than the closing price of the index on the Contract Date, the Interest Adjustment will be negative and will decrease the Segment Interim Value. If the closing price of the Interest Adjustment Index on the day the Interest Adjustment is calculated is less than the than the closing pricing of this Index on the Contract Date, the Interest Adjustment will be positive and will increase the Segment Interim Value.

The contract owner may obtain the daily price of the Interest Adjustment Index by contacting us. If a closing price of the Interest Adjustment Index is not available on any day for which a closing price is needed, then the closing price as of the first preceding Business Day for which a closing price is available will be used.

If the Interest Adjustment Index is discontinued, we are unable for any reason to utilize it, or the calculation of these values are substantially changed, we may substitute another method of determining the values that will be used in the above calculation and will inform the contract owner of such change at the last known address on file with us.

Equity Adjustment

The Equity Adjustment is designed to approximate the change in market value of the derivative instruments that hedge risks associated with our obligation to apply Segment Credits to Index-Linked Segment Options, based on the performance of the Index on the Segment End Date. It does not relate to any particular derivative instrument(s) supporting the Contract. The adjustment accounts for the applicable Cap Rate, Participation Rate, Index Allocation Percentages, Buffer Rate or Floor Rate by using the Black-Scholes pricing model to track the value of a hypothetical set of derivatives on days other than a Segment End Date. The inputs used in the Black-Scholes Method are consistent with market prices that reflect the estimated cost of exiting the hypothetical derivatives before the Segment End Date. At any point in time, the difference in the value of the hypothetical derivatives on this date and on the Segment Start Date is equal to the Equity Adjustment factor. The Equity Adjustment may be negative even when the value of the Index has increased or a decline in the value of the Index is within the amount of the applicable Floor or Buffer.

On any Segment End Date, the Equity Adjustment will be equal to zero and will not result in any adjustment to a Withdrawal. The contract owner may avoid an Equity Adjustment by taking Withdrawals on a Segment End Date.

The total Equity Adjustment for any Index-Linked Segment Option equals (A x B) where:

A Is the Segment Value on this date, immediately prior to any Withdrawal; and

B Is the Equity Adjustment Factor applicable to that Segment Option.

The following hypothetical derivatives are utilized in the calculation of the Equity Adjustment Factor for the Buffer Segment Options and/or Floor Segment Options:

- At-the-money call (ATM Call): This is an option to buy a position in the Index on the next Segment End Date at a strike price equal to the price of the Index on the Segment Start Date. If an Annual Spread is applied to the Segment Option, the strike price will be equal to the price of the Index on the Segment Start Date x (1 + Annual Spread x Segment Term Period).
- Out-of-the-money call (OTM Call): This is an option to buy a position in the Index on the next Segment End Date at a strike price equal to the price of the Index on the Segment Start Date x (1 + Cap Rate).
- Out-of-the-money put (OTM Put): This is an option to sell a position in the Index on the next Segment End Date at a strike price equal to the price of the Index on the Segment Start Date x (1 - Buffer Rate) or with a strike price equal to the price of the Index on the Segment Start Date x (1 – Floor Rate), depending on which Segment Option is being evaluated; and
- At-the-money put (ATM Put): This is an option to sell a position in the Index on the next Segment End Date at a strike price equal to the price of the Index on the Segment Start Date.

For Buffer Segment Options, the value of the derivative instruments is equal to (ATM Call– OTM Call) x Participation Rate – OTM Put. For Floor Segment Options, the value of the derivative instruments is equal to (ATM Call– OTM Call) x Participation Rate – ATM Put + OTM Put.

The Equity Adjustment Factor for any Segment Option is equal to A – B x (1 – Y), where:

- A Is the value of the derivative instruments on the day we calculate the Segment Interim Value;
- B Is the value of the derivative instruments on the Segment Start Date for the applicable Segment Option; and
- Y Is the number of whole years elapsed from the Segment Start Date to the day we calculate the Segment Interim Value, divided by the Segment Term Period.

The Buffer Multi-Index Segment Option requires additional steps to determine the Equity Adjustment Factor:

- For A and B defined above, the value of the derivative instruments for each of the underlying indices is calculated independently using the Black-Scholes Method.
- Weights are assigned based on the relative value of the derivative instruments across the underlying indices to produce an aggregate derivative instrument value for the Buffer Multi-Index Segment Option.
  - 50% weight is assigned to the index with the highest value of derivative instruments on the date in question.
  - 30% weight is assigned to the index with the second highest value of derivative instruments on the date in question.
  - 20% weight is assigned to the index with the lowest value of derivative instruments on the date in question.

These weights will always correspond to Index Allocation Percentages 1, 2, and 3 for the Buffer Multi-Index Segment Option.

Examples – Segment Interim Value

The following table of inputs is used in the following examples. Additionally, an implied volatility of 24%, index dividend yield of 1.95%, and swap rate of 2.60% are assumed (these values are hypothetical for the purpose of illustrating the calculations and are not intended to reflect available values in the market on any given date). Each example assumes that the Segment Value on the Segment Start Date is $100,000.

	1-Year Buffer Segment Option	2-Year Floor Segment Option	6-Year Buffer Segment Option
Contract Date			
Interest Adjustment Index Value	1.00%	1.00%	1.00%
Segment Start Date			
Segment Term Period (in Months)	12	24	72
Segment Option Index Value	100	100	100
Participation Rate	100%	100%	100%
Cap Rate	18%	18%	100%
Floor/Buffer Rate	10%	10%	20%
Annual Fee	0.95%	0.95%	0.95%
Examples – Segment Interim Value			
Time Elapsed Since Contract Date	6	6	6
Time Remaining in Segment Term Period	6	18	66
Segment Value (a)	$99,525.00	$99,525.00	$99,525.00
Interest Rates decreased 50bps. Index Value decreased 25%.			
Equity Adjustment (b)	($16,428.71)	($7,704.45)	($15,712.91)
Interest Adjustment (c)	$2,753.98	$2,753.98	$2,753.98

Segment Interim Value (a) + (b) + (c) = (d)	$85,850.27	$94,574.53	$86,566.08
Withdrawal Charge (e)	($7,962.00)	($7,962.00)	($7,962.00)
Cash Surrender Value (d) + (e)	$77,888.27	$86,612.53	$78,604.08
Interest Rates decreased 50bps. Index Value decreased 10%.			
Equity Adjustment (b)	($4,774.42)	($3,350.86)	($5,838.21)
Interest Adjustment (c)	$2,753.98	$2,753.98	$2,753.98
Segment Interim Value (a) + (b) + (c) = (d)	$97,504.56	$98,928.12	$96,440.77
Withdrawal Charge (e)	($7,962.00)	($7,962.00)	($7,962.00)
Cash Surrender Value (d) + (e)	$89,542.56	$90,966.12	$88,478.77
No change in Interest Rates or Index Value			
Equity Adjustment (b)	$1,512.11	$48.58	$364.48
Interest Adjustment (c)	$0.00	$0.00	$0.00
Segment Interim Value (a) + (b) + (c) = (d)	$101,037.11	$99,573.58	$99,889.48
Withdrawal Charge (e)	($7,962.00)	($7,962.00)	($7,962.00)
Cash Surrender Value (d) + (e)	$93,075.11	$91,611.58	$91,927.48
Interest Rates increased 50bps. Index Value increased 10%.			
Equity Adjustment (b)	$6,710.93	$3,374.67	$6,255.01
Interest Adjustment (c)	($2,666.77)	($2,666.77)	($2,666.77)
Segment Interim Value (a) + (b) + (c) = (d)	$103,569.15	$100,232.90	$103,113.23
Withdrawal Charge (e)	($7,962.00)	($7,962.00)	($7,962.00)
Cash Surrender Value (d) + (e)	$95,607.15	$92,270.90	$95,151.23
Interest Rates increased 50bps. Index Value increased 25%.			
Equity Adjustment (b)	$12,175.19	$7,647.97	$14,486.69
Interest Adjustment (c)	($2,666.77)	($2,666.77)	($2,666.77)
Segment Interim Value (a) + (b) + (c) = (d)	$109,033.42	$104,506.20	$111,344.92
Withdrawal Charge (e)	($7,962.00)	($7,962.00)	($7,962.00)
Cash Surrender Value (d) + (e)	$101,071.42	$96,544.20	$103,382.92

The following example shows the effect of a Withdrawal on the Segment Interim Value.

Effect of a Withdrawal on the Segment Interim Value	
Equity Adjustment Factor	-16.89%
Interest Adjustment Factor	2.77%
Contract Value on Last Contract Anniversary	$100,000.00
Immediately Before Withdrawal	
Segment Value	$99,525.00
Total Equity Adjustment	$ (16,809.77)[1]
Total Interest Adjustment	$2,756.84 [2]
Segment Interim Value	$85,472.007
Withdrawal	
Withdrawal Amount	$20,000.00
Equity Adjustment attributable to the Withdrawal	$(3,378.00)[3]
Interest Adjustment attributable to the Withdrawal	$554.00[4]
Withdrawal Charge	$(800.00)[5]
Net Withdrawal Amount paid to Contract Owner	$16,376.00
Immediately After Withdrawal	
Resulting Segment Value	$80,000.00

1. Total Equity Adjustment = 99,525 x -16.89% = (16,809.17)
2. Total Interest Adjustment = 99,525 x 2.77% = 2,756.84
3. Equity Adjustment attributable to Withdrawal = 20,000 x -16.89% = (3,378)
4. Interest Adjustment attributable to Withdrawal = 20,000 x 2.77% = 554
5. Assumes 8% Withdrawal Charge applies and that no other Withdrawals have occurred since the last Contract Anniversary. 10% of the 100,000 may be taken without a Withdrawal Charge under the Free Withdrawal provision, so only the remaining 20,000 – 10,000 = 10,000 is charged

The following example shows the effect of a Free Withdrawal on the Segment Interim Value.

Effect of a Free Withdrawal on the Segment Interim Value	
Equity Adjustment Factor	-16.89%
Interest Adjustment Factor	2.77%
Contract Value on Last Contract Anniversary	$100,000.00
Immediately Before Withdrawal	
Segment Value	$99,525.00
Total Equity Adjustment	$ (16,809.77)[1]
Total Interest Adjustment	$2,756.84 [2]
Segment Interim Value	$85,472.007
Withdrawal	
Withdrawal Amount	$10,000.00
Equity Adjustment attributable to the Withdrawal	($1,689.00)[3]
Interest Adjustment attributable to the Withdrawal	$277.00[4]
Withdrawal Charge	$0
Net Withdrawal Amount paid to Contract Owner	$8,588.00
Immediately After Withdrawal	
Resulting Segment Value	$90,000

1. Total Equity Adjustment = 99,525 x -16.89% = (16,809.17)
2. Total Interest Adjustment = 99,525 x 2.77% = 2,756.84
3. Equity Adjustment attributable to Withdrawal = 10,000 x -16.89% = (1,689)
4. Interest Adjustment attributable to Withdrawal = 10,000 x 2.77% = 277

Required Minimum Distribution

If the Contract is subject to minimum distribution requirements under Internal Revenue Code Section 401(a)(9), any withdrawal of a minimum distribution required under Section 401(a)(9) with respect to the Contract (a "Required Minimum Distribution"), as calculated by us, will not be subject to Withdrawal Charges. Any Withdrawal made to satisfy required minimum distribution requirements will count towards the Free Withdrawal Amount and will be subject to an Equity Adjustment and Interest Adjustment. If the Owner surrenders the Contract, a Withdrawal Charge will be applied to any Free Withdrawal previously taken during the same Contract Year, including any Required Minimum Distribution Withdrawals. Required Minimum Distributions will incur a Withdrawal Charge if the Owner previously took a Withdrawal in the same Contract Year to satisfy the required minimum distribution requirement under this Contract. In this circumstance, the Owner must wait until the next Contract Anniversary to take their Required Minimum Distribution without incurring a Withdrawal Charge.

Nonforfeiture Compliance

The Appendix provides examples that demonstrate nonforfeiture compliance. For Index-Linked Segment Options, Standard Nonforfeiture Law for Variable Annuities is used. For Fixed Segment Options, Standard Nonforfeiture Law for Deferred Annuities is used.

For Fixed Segment Options, the Minimum Annual Interest Rate that will be set for each contract at issue will be at least as high as the applicable minimum nonforfeiture interest rate. The minimum nonforfeiture interest rate for this contract will be reset for newly issued policies within each calendar quarter and be based on the 5-year Constant Maturity Treasury Rate.

At the beginning of each quarter (in January, April, July, and October), the daily average of the 5-year Constant Maturity Treasury from the second month of the prior quarter will be determined (from November, February, May, and August, respectively). As an example, the July rate would be based on the daily average from May of the current year and will be used for all contracts issued from July 1st through September 30th. This daily average is then reduced by 125 bps. The result is then rounded to the nearest 0.05%, with the result being floored at 1.0% and capped at 3.0%.

As an example, the rate calculated for July 2019 was equal to:

- The average 5-year CMT for May 2019 = 2.19%
- Less the 125bps reduction = 0.94%
- Rounded to the nearest 5bps = 0.95%
- Floored at 1% and Capped at 3% = 1.00%

Once the Minimum Annual Interest Rate is determined for a contract, it will not be redetermined for that contract.

Mortality Table

The mortality table used to calculate reserves is the current Mortality Table required by the Iowa Insurance Department.

II. Reserves

Reserve Basis

The Company will rely on applicable Actuarial Guidelines and principles underlying the CARVM Reserve method as well as the guidance under Actuarial Guideline 43 calculations.

Prepared by: Amber Decker, FSA CERA MAAA
Actuary, Product Development
Athene Annuity and Life Company

Date: January 30, 2020

III. Strategies

Fixed I (05/19), Buffer I (05/19), Buffer MI I (05/19), Floor I (05/19), SCS I (05/19)

Rate Setting

The Contract offers Floor Segment Options, Buffer Segment Options, Buffer Multi-Index Segment Options (marketed as 'Performance Blend'), and Fixed Segment Options, which provide different levels of protection against investment losses. Each Segment Option will have a Segment Term Period. In addition, each Index-Linked Segment Option (Floor, Buffer, Performance Blend) will have an Index (or Indices), a Cap Rate, a Participation Rate, and a Floor Rate or Buffer Rate. The Performance Blend Segment Option (Buffer Multi-Index Segment Option) will also have Index Allocation Percentages.

Segment Credits applied to the Index-Linked Segment Options may be negative if the value of the Index declines. Segment Credits for Fixed Segment Options may not be negative.

The Buffer and Floor Rates offered, the Index Allocation Percentages for the Performance Blend Segment Option, and the Segment Fee imposed on available Index-Linked Segment Options are stated in the Segment Contract Schedule and will not change after a contract is issued. Cap Rates, Participation Rates, and Annual Interest Rates may vary from one Segment Term Period to another, depending on factors such as market volatility, level of interest rates, the competitive environment, and the price and availability of hedging instruments.

Segment Credits on Buffer Strategy

Segment Credits, if any, will be calculated and added to a Buffer Segment Option only on a Segment End Date.

On each Segment End Date, we will calculate the Index Change. The "Index Change" is equal to (A / B) - 1, where:

A is the Index Price for the Segment End Date; and
B is the Index Price on the Segment Start Date.

{If the Index Change is greater than or equal to zero, then the "Segment Credit Percentage" on the Segment End Date will be equal the lesser of (1) or (2), where:

(1) = Greater of zero and B x [A – (D x E)];
(2) = Greater of zero and B x [C – (D x E)]; and where

A is the Index Change;
B is the Participation Rate;
C is the Cap Rate;
D is the Annual Spread; and
E is the number of years in the Segment Term Period.}

{If the Index Change is greater than or equal to zero, then the "Segment Credit Percentage" on the Segment End Date will be equal the lesser of (1) or (2), where:

(1) = Greater of zero and A x B;

(2) = Greater of zero and B x C; and where

A is the Index Change;

B is the Participation Rate;

C is the Cap Rate;}

The two bracketed calculations above are mutually exclusive: either one or the other (with an Annual Spread or without an Annual Spread) will be used for each contract. If we are using the formula without an Annual Spread, we may use the bracketed language in the endorsement to apply a Segment Fee. We do not intend to apply both a Segment Fee and an Annual Spread on any contract, and we have bracketed both features throughout the endorsement to be able to use either a Segment Fee or an Annual Spread, depending on current economic and competitive conditions.

If the Index Change is less than zero, then the "Segment Credit Percentage" on the Segment End Date will be equal to the lesser of zero and (A + B), where:

A is the Index Change; and

B is the Buffer Rate.

The amount of Segment Credits added to this Buffer Segment Option is equal to A x B, where:

A is the Segment Value as of the previous day; and

B is the Segment Credit Percentage.

Segment Credits on Buffer Multi-Index Strategy (Performance Blend)

Segment Credits, if any, will be calculated and added to a Buffer Multi-Index Segment Option only on a Segment End Date.

On each Segment End Date, we will calculate the Index Change for each Index. The "Index Change" is equal to (A / B) - 1, where:

A is the Index Price for the Segment End Date; and

B is the Index Price on the Segment Start Date.

The Index Change will be calculated for Index X, Index Y, and Index Z shown on the Segment Contract Schedule. Each Index Allocation Percentage will then be applied. The Index with the best performing Index Change will be multiplied by the Index Allocation Percentage 1. The Index with the second best performing Index Change will be multiplied by the Index Allocation Percentage 2. The Index with the third best performing Index Change will be multiplied by the Index Allocation Percentage 3. The resulting "Aggregate Index Change" will equal:

(Index Allocation Percentage 1 x Index Change for best performing Index) +

(Index Allocation Percentage 2 x Index Change for second best performing Index) +

(Index Allocation Percentage 3 x Index Change for third best performing Index)

{If the Aggregate Index Change is greater than or equal to zero, then the "Segment Credit Percentage" on the Segment End Date will be equal the lesser of (1) or (2), where:

(1) = Greater of zero and B x [A – (D x E)];

(2) = Greater of zero and B x [C – (D x E)]; and where

A is the Aggregate Index Change;

B is the Participation Rate;

C is the Cap Rate;

D is the Annual Spread; and

E is the number of years in the Segment Term Period.}

{If the Aggregate Index Change is greater than or equal to zero, then the "Segment Credit Percentage" on the Segment End Date will be equal the lesser of (1) or (2), where:

(1) = Greater of zero and B x A;

(2) = Greater of zero and B x C;

A is the Aggregate Index Change;

B is the Participation Rate;

C is the Cap Rate;}

The two bracketed calculations above are mutually exclusive: either one or the other (with an Annual Spread or without an Annual Spread) will be used for each contract. If we are using the formula without an Annual Spread, we may use the bracketed language in the endorsement to apply a Segment Fee. We do not intend to apply both a Segment Fee and an Annual Spread on any contract, and we have bracketed both features throughout the endorsement to be able to use either a Segment Fee or an Annual Spread, depending on current economic and competitive conditions.

If the Aggregate Index Change is less than zero, then the "Segment Credit Percentage" on the Segment End Date will be equal to the lesser of zero and (A + B), where:

A is the Aggregate Index Change; and

B is the Buffer Rate.

The amount of Segment Credits added to this Buffer Segment Option is equal to A x B, where:

A is the Segment Value as of the previous day; and

B is the Segment Credit Percentage.

Segment Credits on Floor Strategy

Segment Credits, if any, will be calculated and added to a Floor Segment Option only on a Segment End Date.

On each Segment End Date, we will calculate the Index Change. The "Index Change" is equal to (A / B) - 1, where:

A is the Index Price for the Segment End Date; and
B is the Index Price for the Segment Start Date.

{If the Index Change is greater than or equal to zero, then the "Segment Credit Percentage" on the Segment End Date will be equal the lesser of (1) or (2), where:

(1) = Greater of zero and B x [A – (D x E)];
(2) = Greater of zero and B x [C – (D x E)]; and where

A is the Index Change;
B is the Participation Rate;
C is the Cap Rate;
D is the Annual Spread; and
E is the number of years in the Segment Term Period.}

{If the Index Change is greater than or equal to zero, then the "Segment Credit Percentage" on the Segment End Date will be equal the lesser of (1) or (2), where:

(1) = Greater of zero and A x B;
(2) = Greater of zero and B x C; and where

A is the Index Change;
B is the Participation Rate;
C is the Cap Rate.}

The two bracketed calculations above are mutually exclusive: either one or the other (with an Annual Spread or without an Annual Spread) will be used for each contract. If we are using the formula without an Annual Spread, we may use the bracketed language in the endorsement to apply a Segment Fee. We do not intend to apply both a Segment Fee and an Annual Spread on any contract, and we have bracketed both features throughout the endorsement to be able to use either a Segment Fee or an Annual Spread, depending on current economic and competitive conditions.

If the Index Change is less than zero, then the "Segment Credit Percentage" on the Segment End Date will be equal to the greater of A and B, where:

A is the Index Change; and
B is the Floor Rate expressed as a negative value.

The amount of Segment Credits added to this Floor Segment Option is equal to A x B, where:

A is the Segment Value as of the previous day; and
B is the Segment Credit Percentage.

Segment Credits on Fixed Strategy

A Fixed Segment Option credits interest daily at a guaranteed rate. The daily rate is calculated as [(1+Annual Interest Rate) ^ (1/365) - 1].

Bailout Endorsement

The Cap Rate, Participation Rate, and Annual Interest Rate will not be declared until the first Segment Start Date and will not be available to the Contract Owner at issue. Instead, we will provide Bailout Rates at the time of application, which will be printed in the Segment Contract Schedule. This only applies to contracts at issue; for renewal Segment Term Periods, we will notify contract owners at least 15 calendar days prior to the Segment End Date of the Cap Rates, Participation Rates, and Annual Interest Rate applicable to available Segment Options for the next Segment Term Period.

For the initial Segment Term Period, if the declared Cap Rate, Participation Rate, or Annual Interest Rate for a Segment Option to which a contract owner has allocated Contract Value is less than the Bailout Rate we specified in the Segment Contract Schedule for the Segment Option, the contract owner may cancel the Contract during the first 60 days after the Contract Date and receive the Purchase Payment less any Withdrawals. Fixed Segment Options will have a Bailout Annual Interest Rate and Index-Linked Segment Options will have Bailout Cap Rate and Bailout Participation Rate. No Withdrawal Charge, Interest Adjustment, or Equity Adjustment will apply if the contract owner exercises this provision.

Guaranteed Minimum Death Benefit Endorsement

- The Guaranteed Minimum Death Benefit Endorsement will automatically be attached to each contract. There will not be a charge for this feature.
- If the amount of the Death Benefit provided under the Contract is less than the Return of Premium Benefit, then the amount of the Death Benefit will be increased to equal the Return of Premium Benefit.

The Return of Premium Benefit is equal to A – B, where:

A is the Purchase Payment; and

B is the sum of net proceeds from all prior Withdrawals.

Net proceeds from prior Withdrawals are equal to the Contract Value withdrawn after the application of Withdrawal Charges, Interest Adjustments, and Equity Adjustments.

The deduction of the Segment Fee will not be treated as a Withdrawal.

IV. Appendix: Variable Annuity Nonforfeiture Demonstration

Annual Contract Charge: $50
Net Investment Return: 7%

End of Year	Contract Value	Withdrawal Charge	Free Withdrawal	Cash Surrender Value	SNFL Minimum	Comply?
0	10,000	8.00%	0.00%	9,200	8,750	yes
1	10,650	8.00%	0.00%	9,798	9,313	yes
2	11,346	8.00%	0.00%	10,438	9,914	yes
3	12,090	7.00%	0.00%	11,243	10,558	yes
4	12,886	6.00%	0.00%	12,113	11,247	yes
5	13,738	5.00%	0.00%	13,051	11,985	yes
6	14,650	4.00%	0.00%	14,064	12,774	yes
7	15,625	0.00%	0.00%	15,625	13,618	yes
8	16,669	0.00%	0.00%	16,669	14,521	yes
9	17,786	0.00%	0.00%	17,786	15,488	yes
10	18,981	0.00%	0.00%	18,981	16,522	yes
11	20,259	0.00%	0.00%	20,259	17,628	yes
12	21,627	0.00%	0.00%	21,627	18,812	yes
13	23,091	0.00%	0.00%	23,091	20,079	yes
14	24,658	0.00%	0.00%	24,658	21,435	yes
15	26,334	0.00%	0.00%	26,334	22,885	yes
16	28,127	0.00%	0.00%	28,127	24,437	yes
17	30,046	0.00%	0.00%	30,046	26,098	yes
18	32,099	0.00%	0.00%	32,099	27,874	yes
19	34,296	0.00%	0.00%	34,296	29,776	yes
20	36,647	0.00%	0.00%	36,647	31,810	yes

V. Appendix: Deferred Annuity Nonforfeiture Demonstrations

Retrospective Test using 1.00% Nonforfeiture Rate								
End of Year	Contract Value 1% Growth	Withdrawal Charge	Free Withdrawal	Free Withdrawal Amount	Contract Value less Withdrawal Charge	Cash Surrender Value	Nonforfeiture Minimum Surrender Value using 87.5% at 1.00%	Comply?
1	10,100	8.00%	8.0%	800	9,356	9,356	8,838	yes
2	10,201	8.00%	8.0%	808	9,450	9,450	8,926	yes
3	10,303	7.00%	8.0%	816	9,639	9,639	9,015	yes
4	10,406	6.00%	8.0%	824	9,831	9,831	9,105	yes
5	10,510	5.00%	8.0%	832	10,026	10,026	9,196	yes
6	10,615	4.00%	8.0%	841	10,224	10,224	9,288	yes
7	10,721	0.00%	0.0%	0	10,721	10,721	9,381	yes
8	10,829	0.00%	0.0%	0	10,829	10,829	9,475	yes
9	10,937	0.00%	0.0%	0	10,937	10,937	9,570	yes
10	11,046	0.00%	0.0%	0	11,046	11,046	9,665	yes

Prospective Test using 1.00% Nonforfeiture Rate				
End of Year	Cash Surrender Value	Maturity Value Projected @ 1.00%	Maturity Value Discounted @ 2.00%	Comply?
1	9,356	11,046	9,243	yes
2	9,450	11,046	9,428	yes
3	9,639	11,046	9,616	yes
4	9,831	11,046	9,809	yes
5	10,026	11,046	10,005	yes
6	10,224	11,046	10,205	yes
7	10,721	11,046	10,409	yes
8	10,829	11,046	10,617	yes
9	10,937	11,046	10,830	yes
10	11,046	11,046	11,046	yes